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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/598,568	09/05/2006	Jens-Peter Schlomka	DE 040073	7284

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BRIARCLIFF MANOR, NY 10510

EXAMINER

SONG, HOON K

ART UNIT	PAPER NUMBER
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2882

MAIL DATE	DELIVERY MODE
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07/14/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.		Applicant(s)	
	10/598,568		SCHLOMKA ET AL.	
	Examiner		Art Unit	
	Hoon Song		2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 June 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/9/2008 has been entered.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Harding (US 6470067B1).

Regarding claim 1, Harding teaches Coherent scatter computer tomography apparatus for examination of an object of interest, comprising:

a source of radiation (S);

a first radiation detector (160); and

a second radiation detector (161);

wherein the source of radiation generates a radiation beam adapted to penetrate the object (13) of interest in a fan plane (41);

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wherein the coherent scatter computer tomography apparatus further comprises a collimator (31) arranged between the source S of radiation and the object of interest,

wherein the collimator comprises a plurality of collimator portions (walls) that collimate the radiation beam in a direction substantially perpendicular to the fan plane (figure 1),

wherein the first radiation detector 160 is arranged opposite to the source of radiation in the fan plane (figure 1);

wherein the first radiation detector 160 is arranged to detect a first radiation of the collimated radiation beam (figure 1);

wherein the second radiation detector 161 is arranged opposite to the source of radiation S with an offset from the fan plane in a direction normal to the fan plane (figure 3);

wherein the second radiation detector is arranged to detect a second radiation of the collimated radiation scattered from a location in the object of interest (figure 1);

wherein at the location, the second radiation beam has a dimension in the direction normal to the fan plane (figures 1 and 3);

wherein a scatter angle between photons of the second radiation scattered at the location along the dimension from the radiation beam and the fan plane is constant (figure 1).

Regarding claim 2, Harding teaches the radiation beam is focused at a focus point;

wherein the focus point by the collimator is at a distance from the source of radiation;

and

wherein the second radiation detector is arranged at the distance from the source of radiation (figure 1).

Regarding claim 3, Harding teaches the collimator is adapted to collimate the radiation beam such that the radiation beam is focused at a focus point being at the same distance from the source of radiation as the second radiation detector (figure 1).

Regarding claim 6, Harding teaches each of the first and second detectors comprises a line of detector elements 161, 160, each of these lines being arranged in parallel to the fan plane (figure 1).

Claims 1, 6, 7 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Komardin (US 6175117B1).

Regarding claim 1, 6, 7 and 9, Komardin teaches Coherent scatter computer tomography apparatus for examination of an object of interest, comprising:

- a source of radiation (20);

- a first radiation detector (38); and

- a second radiation detector (40);

wherein the source of radiation generates a radiation beam adapted to penetrate the object of interest in a fan plane (figure 1);

wherein the coherent scatter computer tomography apparatus further comprises a collimator (18) arranged between the source 20 of radiation and the object of interest (32),

wherein the collimator comprises a plurality of collimator portions that collimate the radiation beam in a direction substantially perpendicular to the fan plane (figure 6a),

wherein the first radiation detector is arranged opposite to the source of radiation in the fan plane (figure 1);

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wherein the first radiation detector is arranged to detect a first radiation of the collimated radiation beam (figure 6a);

wherein the second radiation detector is arranged opposite to the source of radiation with an offset from the fan plane in a direction normal to the fan plane (figure 6a);

wherein the second radiation detector is arranged to detect a second radiation of the collimated radiation beam scattered from a location in the object of interest (figure 6a);

wherein at the location, the second radiation has a dimension in the direction normal to the fan plane (figure 6a);

wherein a scatter angle between photons of the second radiation scattered at the location along the dimension from the radiation beam and the fan plane is constant (figure 6a).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harding in view of Komardin.

Regarding claims 7 and 9, Harding teaches a method of examining an object of interest with a coherent scatter computer tomography apparatus, the method comprising the acts of:

generating a radiation beam (S) penetrating the object of interest 13 in a fan plane 41;

detecting (16) a first radiation of the radiation beam transmitted through the object of interest;

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detecting (161) a second radiation of the radiation beam scattered from a location in the object of interest;

wherein the location has an offset from the fan plane in a direction normal to the fan plane (figures 1 and 3);

wherein the second radiation detector is arranged to detect a second radiation of the collimated radiation scattered from a location in the object of interest (figures 1 and 3);

wherein a scatter angle between photons of the second radiation scattered at the location along the dimension from the radiation beam and the fan plane is constant (figures 1 and 3).

Harding fails to teach the radiation beam is generated as stacked collimated beam that are stacked in a direction substantially perpendicular to the fan plan.

Komardin teaches a radiation source generating a radiation beam as stacked collimated beam that are stacked in a direction substantially perpendicular to a fan plan.

It would have been obvious to one of ordinary skill in the art at the time of the invention to adapt the collimator of Harding with the collimator as taught by Komardin, since it would reduce the patient's exposure time.

Regarding claim 8, Harding teaches collimating the radiation beam such that it is focused at a focus point having the same distance from a source of radiation as a point where the second radiation is detected (figure 1).

Claims 4-5 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harding in view of Ashe et al. (US 4096389) and Guru et al. (US 6377661B1).

Regarding claim 4, Harding fails to teach the collimator comprises a first plurality of high-Z material sheets and a second plurality of tapered plastic layers sandwiched between the first plurality of high-Z material sheets.

Ashe teaches the collimator (figure 7).

It would have been obvious to one of ordinary skill in the art at the time of the invention to provide CT system of Harding with the collimator as taught by Ashe, since the collimator would minimize radiation exposure and improve resolution in radiation imaging device.

Guru teaches a tapered x-ray collimator.

It would have been obvious to one of ordinary skill in the art at the time of the invention to provide CT system of Harding with the tapered collimator as taught by Guru, since it would provide better beam collimation.

Response to Arguments

Applicant's arguments with respect to claims 1-10 have been considered but are moot in view of the new ground(s) of rejection.

The applicant argues that Komardin fails to teach “the first radiation detector is arranged opposite to the source of radiation in the fane plane” and “the second radiation detector is arranged opposite to the source of radiation with an offset from the fan plane in a direction normal to the fan plane”. The examiner disagrees.

Komardin teaches a two dimensional detector 28 positioned opposite to the source of the radiation in the fane plane and a zone 38 of the two dimensional detector for receiving radiation in a transmitted beam and the other zone 40 for receiving the scattered beam. Accordingly,

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Komardin's detector with two different zones would be read on the claimed limitation and the applicant's argument is not persuasive.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoon Song whose telephone number is (571) 272-2494. The examiner can normally be reached on 9:30 AM - 7 PM, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Glick can be reached on (571) 272 - 2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Hoon Song/
Primary Examiner, Art Unit 2882